TRANSPORTATION

PARKING: CONDITIONS AND TRENDS

A BACKGROUND STUDY FOR THE PARKING MANAGEMENT PLAN PREPARED JOINTLY BY THE SAN FRANCISCO DEPARTMENTS OF PUBLIC WORKS AND CITY PLANNING, DECEMBER 1975

PARKING IN SAN FRANCISCO

CONDITIONS AND TRENDS

Prepared by the San Francisco
Department of Public Works and
the Department of City Planning

December 1975

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TABLES, MAPS AND FIGURES

Presented in this report are the results of the data gathering and analysis conducted by the Departments of Public Works and City Planning to fulfill the data base requirement of the Parking Management Plan regulation originally established by the Federal Environmental Protection Agency. This data base was to include an inventory of existing parking spaces, parking rates and occupancy patterns, in addition to vehicle miles traveled and the existing controls on parking. The growth in the parking supply and vehicle miles traveled during the next 20 years were to be projected.

In some instances the data presented in this report are the results of an extensive survey carried out as part of the study. In such cases, the complete survey, with methodology indicated is included in the Appendix to this report.

EXISTING PARKING SUPPLY

1. On-Street Spaces

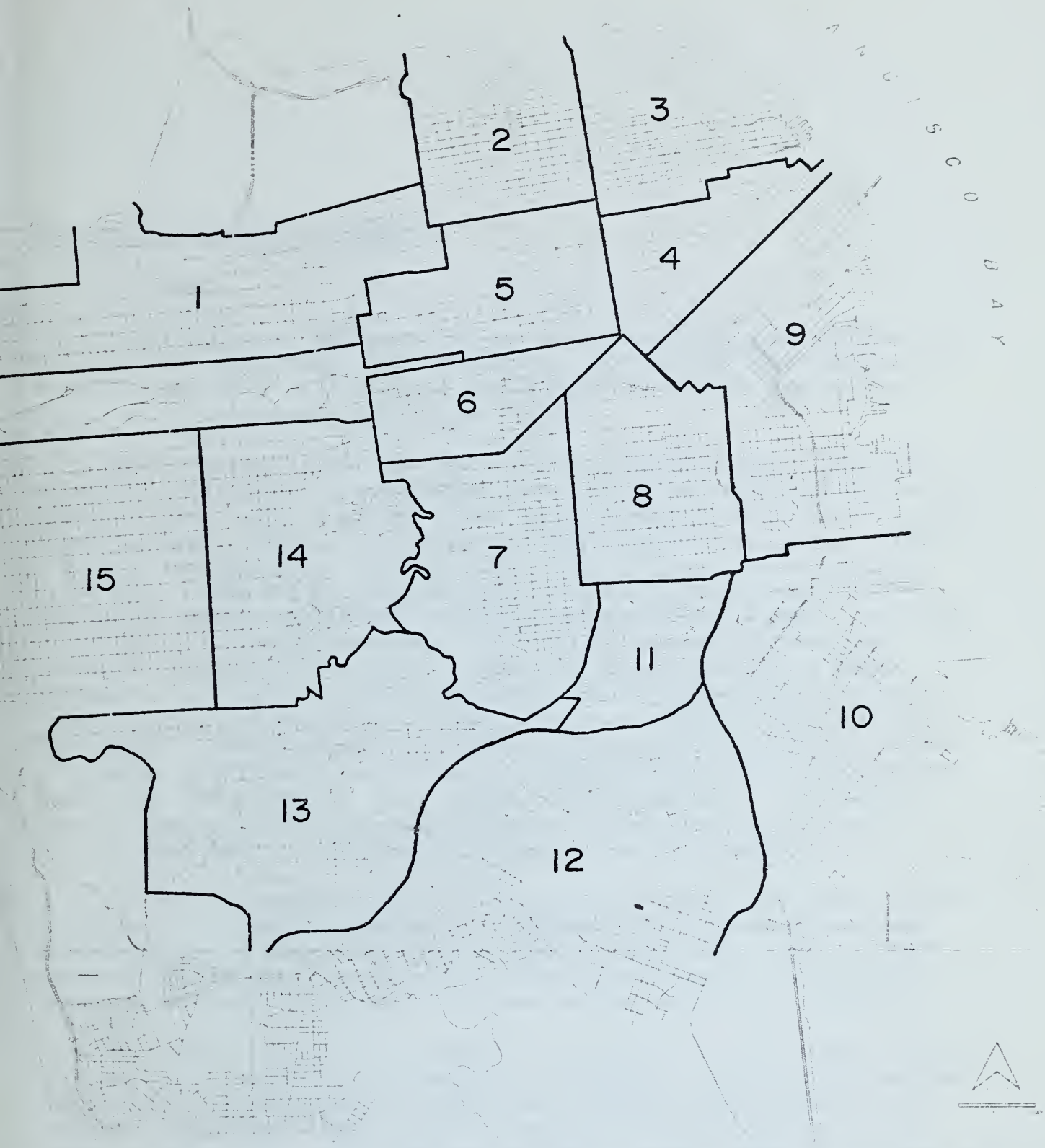
The inventory of on-street spaces in the city was accomplished by the Department of Public Works by utilizing a combination of field surveys done during the summer of 1974 and information contained on parking meter maps.

The numbers of spaces in each category (regular meters, special meters, non-metered spaces, white, green yellow and taxi zone spaces, and driveways) by subarea are given in Table 1. The subareas are indicated on Map 1. The methodology for deriving the data is given in the Report on San Francisco On-Street Parking Inventory contained in the Appendix to this report.

TABLE 1. ON-STREET PARKING SPACES* - 1975

Area	Non-Metered Spaces	Metered Spaces Regular	Metered Spaces Special	Special Use Spaces White	Special Use Spaces Green	Special Use Spaces Yellow	Special Use Spaces Taxi	Driveways (Garage Doors)
1	18,819	1,179	1	465	250	358	3	14,858
2	8,866	693	8	241	121	188	2	7,493
3	6,918	2,151	74	427	95	956	30	3,487
4	1,768	3,406	439	606	16	1,770	92	2,769
5	10,188	1,007	1	472	154	269	5	5,379
6	6,634	334	0	50	51	94	0	3,534
7	14,906	304	0	137	65	112	1	8,831
8	11,425	1,554	0	209	165	791	3	6,756
9	9,708	782	0	120	123	985	1	6,043
10	14,183	108	0	94	47	114	0	6,697
11	7,741	275	0	79	34	59	1	4,634
12	28,713	452	0	157	28	124	1	18,621
13	23,251	217	0	51	59	36	1	12,101
14	15,309	609	0	112	99	89	2	10,652
15	21,049	549	0	136	133	98	1	14,076
Totals	199,478	13,620	523	3,356	1,440	6,043	143	125,933

* From parking meter maps and field surveys conducted by the Traffic Engineering Section of the Department of Public Works, Summer, 1975.



SAN FRANCISCO ON-STREET PARKING INVENTORY

Map 1

OO Parking Inventory Areas

2. Off-Street Spaces - Downtown

a. Supply

The inventory of off-street spaces in the downtown area includes all parking lots and garages, both public and private. The inventory was developed through a field survey conducted by the Traffic Engineering Division of the Department of Public Works.

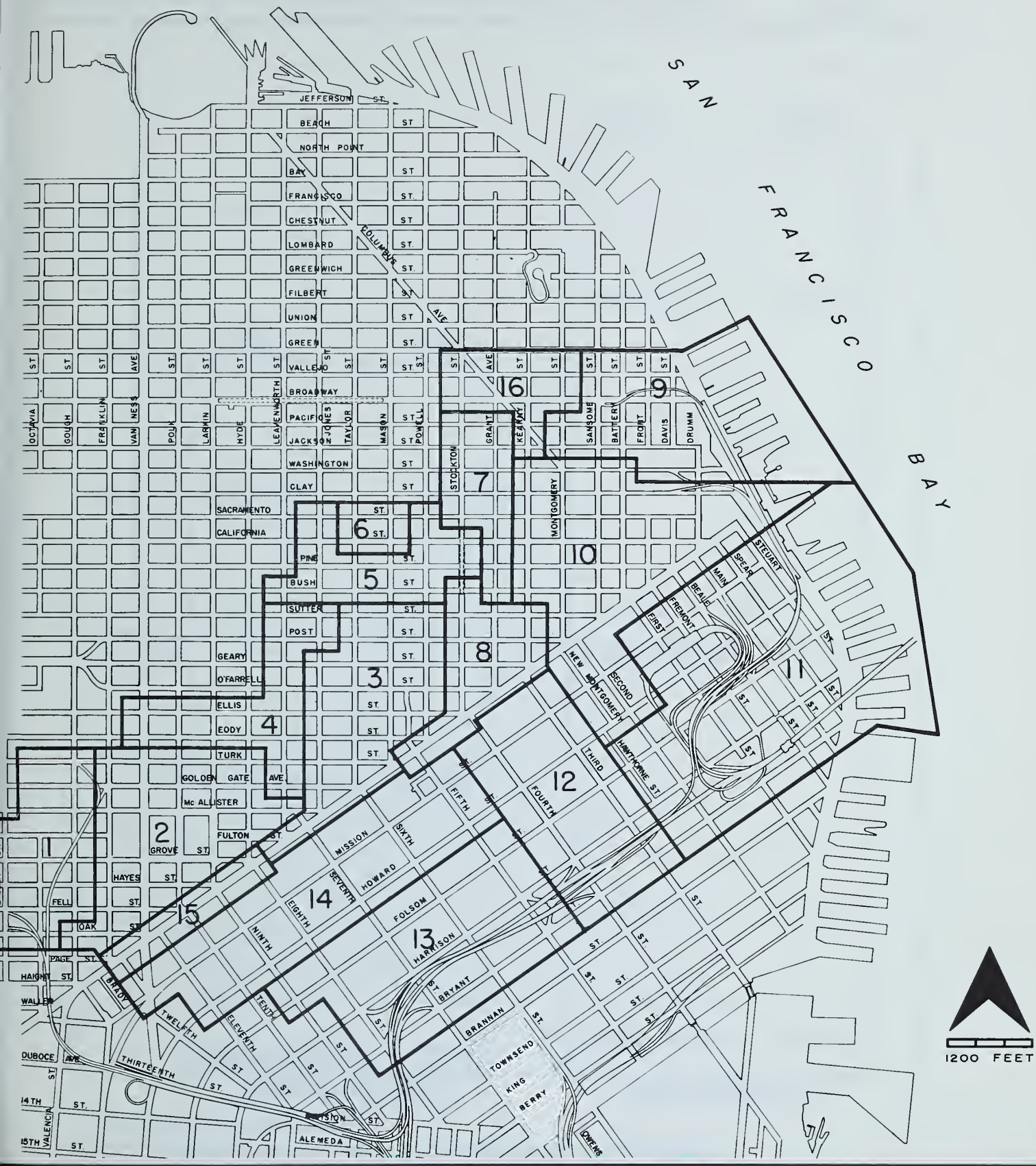
The area surveyed was the same as that surveyed in 1965*, and shown in Map 2. The survey indicates that there are approximately 64,820 available off-street parking spaces in the area, compared with a total of 49,610 spaces in 1965. This is an increase of 15,210 off-street parking spaces over a 10 year period, an average growth rate of 1,520 spaces annually since 1965. This can be compared with an average growth rate of 1,400 off-street spaces annually in the period between 1948 and 1965. In Figure 1, the number of spaces by type of facility is compared for the years 1965 and 1975. The largest growth in numbers of spaces occurred in public garages (28,100 spaces in 1975, compared with 21,560 in 1965), while the largest percent of growth was in private garages - 218 percent over the 1965 level. Private garages are usually accessory parking located within a building specifically for the use of employees or clients of businesses located in that building. This growth is reflected in the fact that in 1965, 81 percent of the off-street spaces were available to the public, while in 1975 only 76 percent of the total spaces were public.

In order to observe where the major changes in the off-street parking supply have occurred, an analysis by subareas of the downtown was made. The boundaries of these subareas are shown on Map 3 and enclose an area somewhat smaller than was covered by the entire inventory. The changes in each subarea from 1965 to 1975 are shown on this map, and in Table 2.

The largest change was in subarea 8, where there were 3,366 spaces in 1965 and 7,657 in 1975, an increase of 127 percent. Much of this increase occurred in the San Francisco Redevelopment Agency's Embarcadero Center. The retail area around Union Square (subarea 5) had an increase of 1725 spaces or 47 percent, while the area around Chinatown showed an increase of 1417 spaces or 50 percent. The south-of-Market portion of the survey area generally showed a lower growth rate than the north-of-Market portion. However, subareas 13 and 14 added 1165 and 1518 spaces respectively (21 and 52 percent). The supply in subarea 9 decreased by 131 spaces, the only decline in the 10 year period.

The City's Parking Authority owns 11 parking garages and lots in the downtown area. They account for 8398 spaces, 13 percent of all off-street

*San Francisco Downtown Parking, Part I of the Downtown Parking and Traffic Survey, San Francisco Department of Public Works, Nov. 1966.



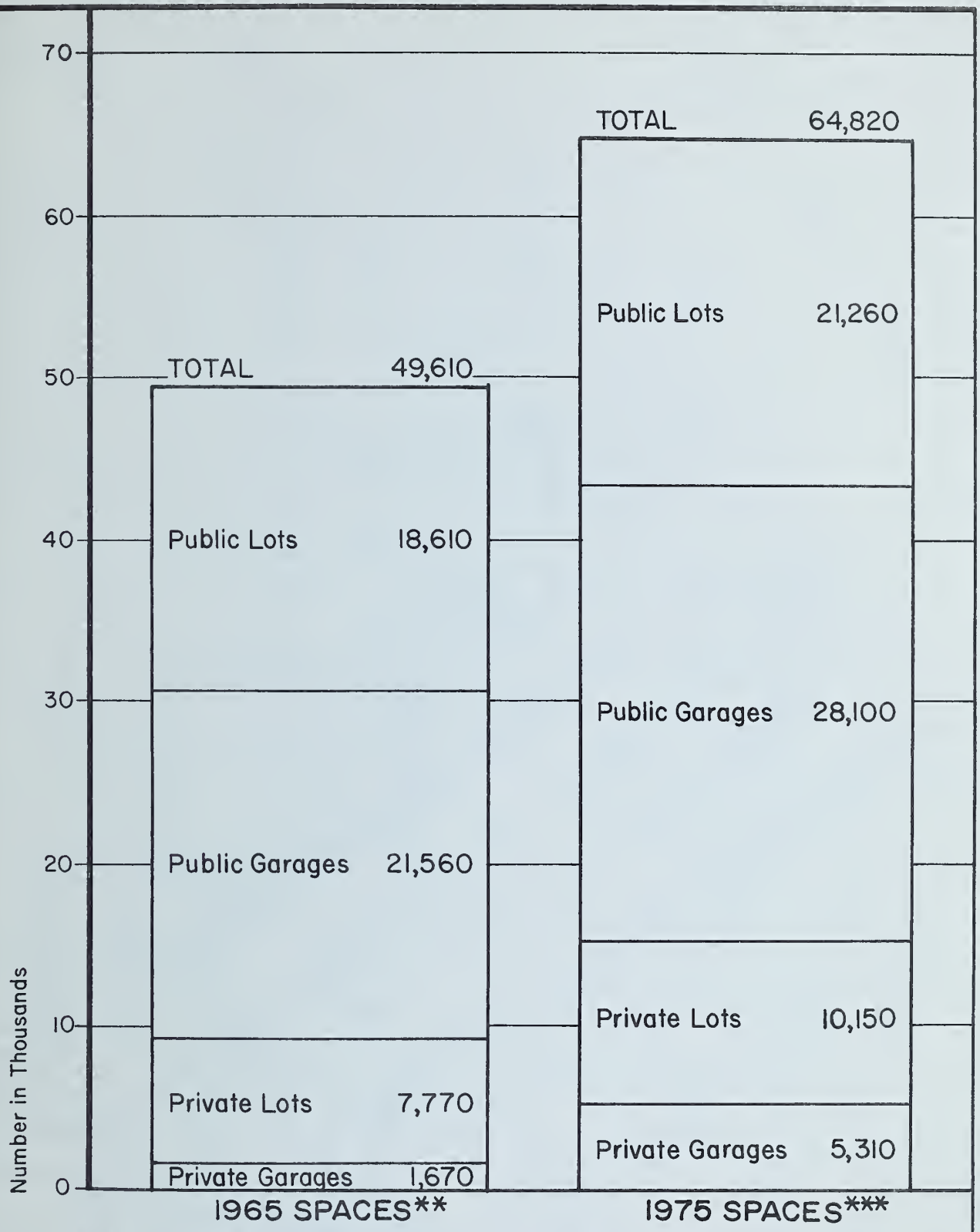
DOWNTOWN OFF-STREET PARKING SPACE INVENTORY - AREA SURVEYED

Map 2

Note: Numbers Indicate Funtianal Areas Used in 1965 DPATS Survey

FRANCISCO DEPARTMENT OF CITY PLANNING

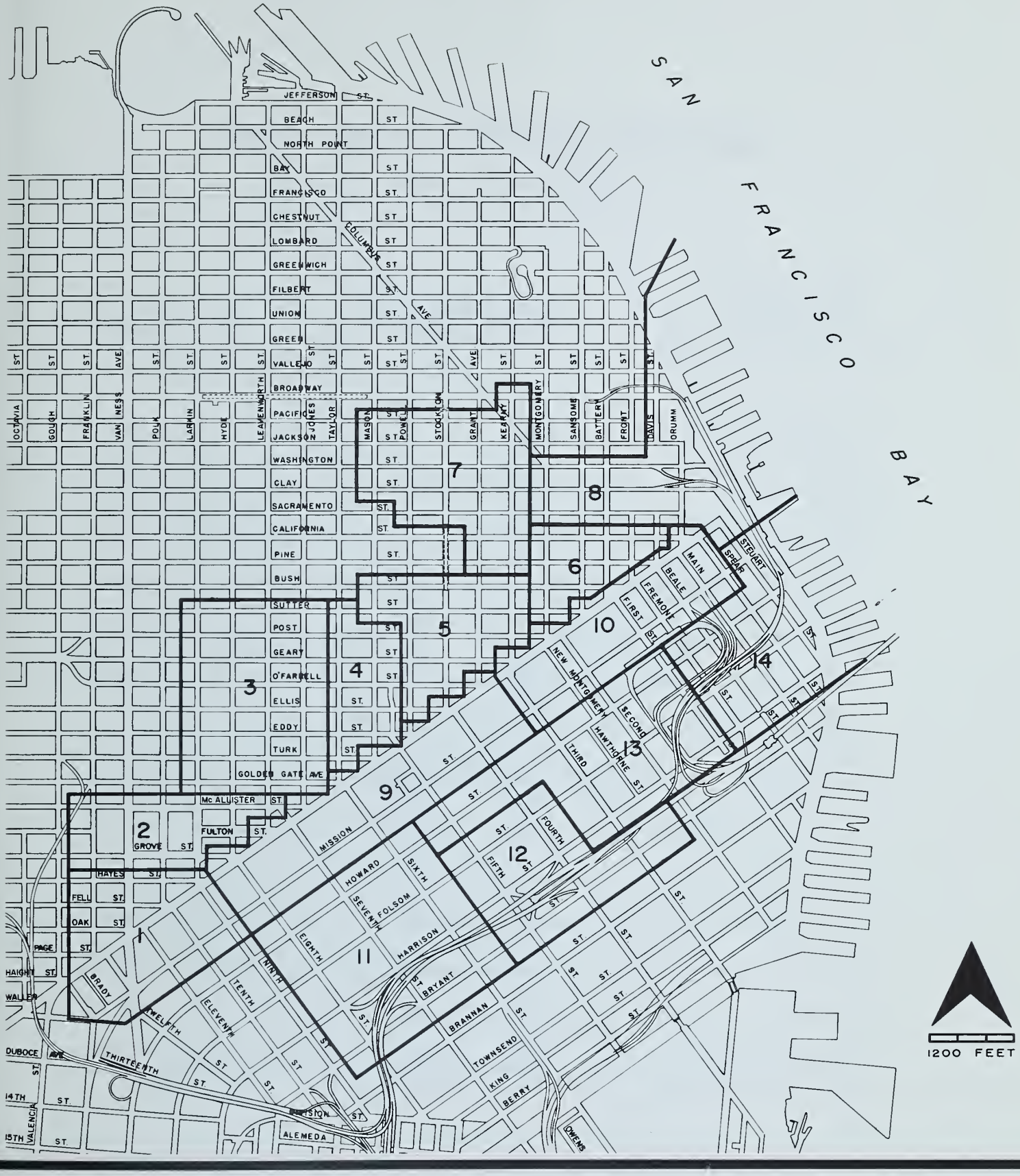
DOWNTOWN OFF-STREET PARKING SPACES* Figure 1



* See Map 2 for area Surveyed

** San Francisco Downtown Parking & Traffic Study, Dept. Public Works

*** from field surveys conducted by Dept. Public Works, 1975



1965 AND 1975 DOWNTOWN OFF-STREET PARKING SPACE INVENTORY BY AREA

Map 3

AREA	1965 Supply	1975 Supply
1	1983	2617
2	1563	1621
3	3053	3978
4	3835	5264
5	3669	5394
6	1348	1857
7	2829	4246
8	3366	7657
9	5531	5400
10	4095	4636
11	2350	2691
12	1645	2266
13	5535	6700
14	2899	4417
TOTAL	43,701	53,744

TABLE 2. CHANGES IN OFF-STREET PARKING SUPPLY

(Refer to Map 3)

Area	Changes in Spaces 1965-1975		Average Space Growth/Year 1965-1975
		%	
1	+ 634	32	+ 63
2	+ 58	4	+ 6
3	+ 925	30	+ 93
4	+ 1429	37	+ 143
5	+ 1725	47	+ 173
6	+ 509	38	+ 51
7	+ 1417	50	+ 142
8	+ 4291	127	+ 429
9	- 131	-2	- 13
10	+ 541	13	+ 54
11	+ 341	15	+ 34
12	+ 621	38	+ 62
13	+ 1165	21	+ 117
14	+ 1518	52	+ 152

parking spaces in this area, and 17 percent of all publically available spaces. The location of each facility and the number of stalls is shown on Map 4. A listing of these facilities and the rates is contained in the Appendix to this report.

The supply of off-street parking spaces was also analyzed by zoning district and is shown in Table 3. The boundaries of the districts are shown on Map 5. There are 288 parking facilities in the C-3 districts comprising San Francisco's Downtown. The C-3-Office district, encompassing the most intensely developed office space area of downtown, had the most spaces of all the districts - 13,784 (in 70 facilities) compared to 4372 spaces (in 17 facilities) in the C-3-Retail district around Union Square, 10,056 spaces (in 106 facilities) in the C-3-Service district south of Market Street, and 12,087 spaces (in 95 facilities) in the C-3-General District. Approximately 93 percent (12,863) of all off-street spaces in the C-3-O district are available to the public; in all of the C-3 districts 88 percent of the off-street spaces are available to the public.

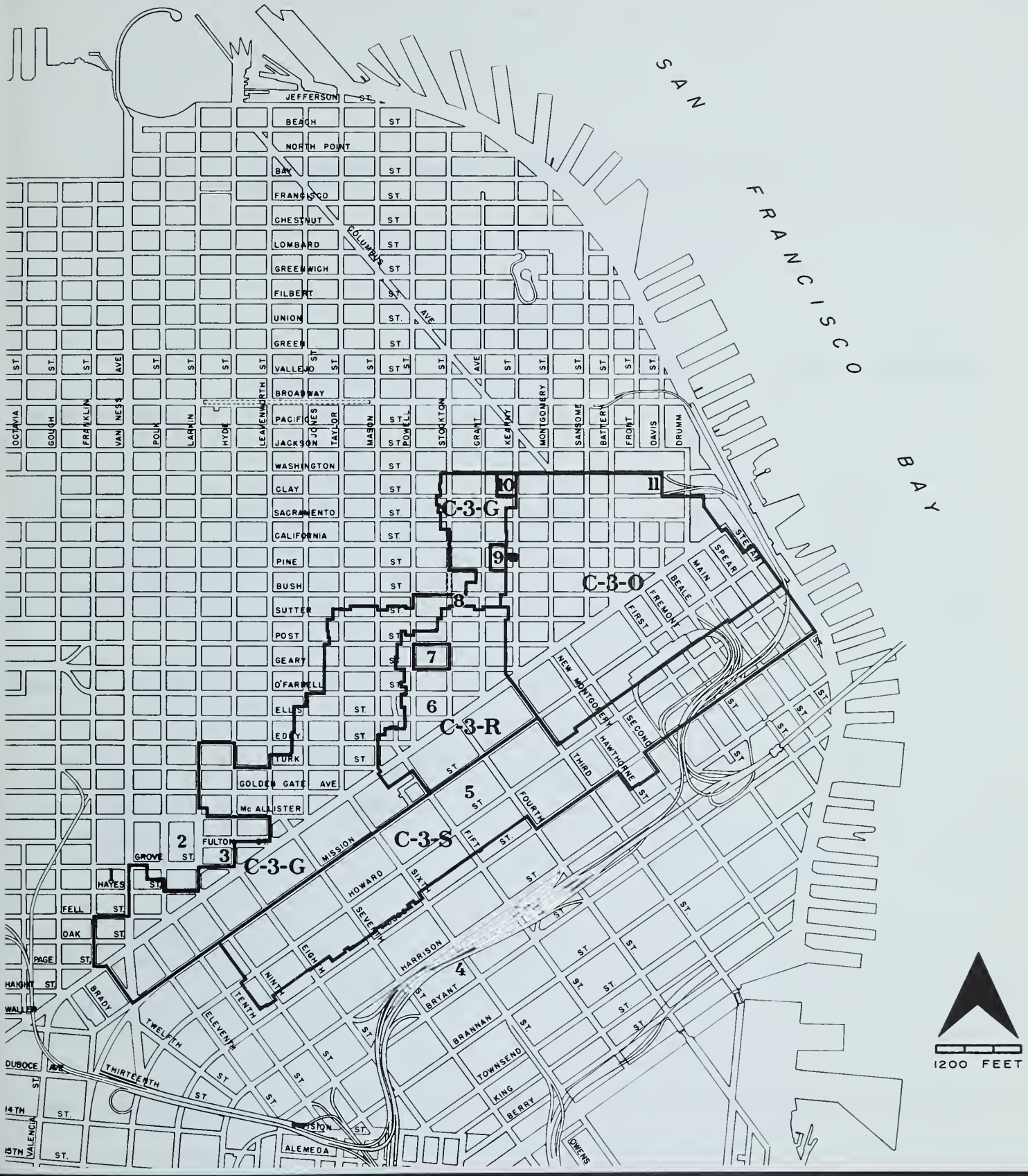
It should be noted that in the downtown area approximately 3000 new parking spaces will be added in the next five years if proposed projects that have been approved or are in the review process are built. One thousand of these spaces will be in parking garages built as separate uses; the remainder will be built as parking accessory to some other principal use such as an office building. In addition, 1,123 net new spaces would be provided if YBC is built, and the Bank of America plans an 800 car satellite parking facility for its data center being built at Market and 11th Streets.

b. Rates and Occupancy

A sample of over 100 garages and lots in the inventory area was surveyed during the summer of 1975 to determine rates and occupancy levels. The average rates and occupancy are shown on Map 6, while the range in rates and occupancy levels are indicated in Table 4.

The minimum and maximum rates and the peak occupancy levels for each facility surveyed are given in the Appendix to this report. The highest rates generally occur in the financial and retail areas of the downtown, with the highest occupancy rates in the financial district, the retail district and the area around the Civic Center. The areas south of Market Street, where most parking facilities are surface lots, show significantly lower rates and occupancy levels.

While the scope of the parking management study did not allow for a survey to determine the length of time parked, data is available from the 1966 Downtown Parking and Traffic Study done by the Department of Public Works. Table 5 lists this data by functional area (see Map 2 for the boundaries of these areas). These data cover off-street parkers in all types of facilities from 10 a.m. to 6 p.m. on a weekday. For the downtown areas as a whole, 53 percent of all parkers parked for more than 4 hours.



C-3 ZONING DISTRICTS AND PARKING AUTHORITY GARAGES AND LOTS

Map 4

1. Civic Center Auto Park — 225 Stalls
2. Civic Center Plaza Garage — 840 Stalls
3. Marshall Square Parking Plaza — 111 Stalls
4. Seventh & Harrison Parking Plaza — 270 Stalls
5. Fifth & Missian Garage — 1788 Stalls
6. Ellis-O'Farrell Garage — 900 Stalls
7. Union Square Garage — 1081 Stalls
8. Sutter-Stacktan Garage (500 spaces being added) — 870 Stalls
9. St. Mary's Square Garage — 828 Stalls
10. Portsmouth Square Garage — 504 Stalls
11. Golden Gateway Garage — 981 Stalls

TABLE 3. 1975 DOWNTOWN PARKING SUPPLY BY ZONING DISTRICT

	Zoning Districts				
-	C-3-O	C-3-R	C-3-S	C-3-G	All Districts
Number of Lots					
# of spaces in ()	20	9	96	55	
Private	3 (177)	1 (20)	25 (988)	9 (436)	
Commercial	17 (1850)	7 (808)	70 (6407)	42 (2677)	
Government	0	0	0	2 (78)	
Hotel/Motel	0	1 (45)	1 (34)	2 (424)	
% Available to the Public	91%	93%	86%	87%	84%
Number of Garages	50	8	10	40	
Private	10 (664)	1 (31)	2 (310)	9 (673)	
Commercial	39 (11,013)	5 (3243)	6 (2275)	27 (7203)	
Government	0	1 (125)	0	2 (156)	
Hotel/Motel	1 (80)	1 (100)	1 (42)	2 (440)	
% Available to the Public	94%	90%	87%	85%	90%
Total Number of Facilities	70	17	106	95	
% Available to the Public					88%
Number of Lot Spaces	2,027	873	7,429	3,615	13,944
Number of Garage Spaces	11,757	3,499	2,627	8,472	26,355
Total Spaces	13,784	4,372	10,056	12,087	50,299

DOWNTOWN COMMERCIAL ZONING DISTRICTS

Map 5

C-3-G (General)
C-3-S (Service)
C-3-R (Retail)
C-3-O (Office)
P (Public Zone)

DOWNTOWN OFF-STREET PARKING FACILITIES: AVERAGE RATES & OCCUPANCY

Map 6

AREA	2 Hour Rate (Av.)	All Day (Av.)	Average % Occupied
1	$1.44	$2.22	75%
2	1.25	2.35	90%
3	1.59	2.01	78%
4	2.01	3.35	90%
5	1.57	3.23	99%
6	2.80	4.03	102%
7	2.08	3.51	86%

AREA	2 Hour Rate (Av.)	All Day (Av.)	Average % Occupied
8	$2.93	$4.24	90%
9	1.25	1.85	84%
10	2.32	3.21	80%
11		.71	72%
12		.50	46%
13		1.13	73%
14		1.35	83%

• Sampled Location

Notes: Occupancy Refers to PUBLIC Facilities Only.
Sampling of Lots and Garages Done Between 1 P.M. and 2 P.M., June - September 1975 by the Departments of Public Works and City Planning.

TABLE 4. RANGE OF RATES IN FACILITIES SURVEYED*

	Rate for 2 hours		Rate for All Day	
Area	Low	High	Low	High
1	$ .50	$2.00	$1.75	$3.25
2	.60	2.00	1.75	3.00
3	.55	2.25	1.00	3.00
4	1.40	2.75	2.00	4.75
5	.80	2.70	2.50	3.90
6	2.40	3.40	3.85	4.25
7	.55	3.50	2.25	4.50
8	1.50	5.00	1.50	6.00
9	.50	2.00	1.00	3.00
10	1.40	3.10	2.25	4.15
11	-	-	.50	1.00
12	-	-	.25	.75
13	-	-	.85	1.50
14	-	-	1.00	2.00

*Sampling of lots and garages done between 1 PM and 2 PM, June-September 1975, by the Departments of Public Works and City Planning.

TABLE 5. DURATION OF PARKING IN OFF-STREET FACILITIES*

Functional Area (Refer to Map 2)	Number of Short-Term Parkers (Under 4 hours)			Number of Long-Term Parkers (Over 4 hours)			Total Parkers
	Lots		Garages	Lots		Garages	
1	274	28%	3	706	72%	0	983
2	1,327	46%	420	1,140	54%	946	3,833
3	1,694	60%	3,636	1,099	40%	2,467	8,896
4	505	50%	269	400	50%	365	1,539
5	210	49%	643	190	51%	692	1,735
6	69	66%	204	39	34%	103	415
7	32	76%	207	31	24%	45	315
8	517	69%	3,369	146	31%	1,601	5,633
9	299	34%	354	803	66%	457	1,913
10	1,268	42%	3,525	2,278	58%	4,269	11,340
11	761	18%	378	4,559	82%	756	6,454
12	1,061	35%	358	2,337	65%	262	4,018
13	664	33%	11	1,381	67%	7	2,063
14	1,989	57%	2,074	2,165	43%	861	7,089
15	734	57%	262	601	43%	164	1,761
16	171	42%	80	197	58%	151	599
Total	11,575 (27,368)	47%	15,793	18,072 (31,118)	53%	13,146	58,586

* On a weekday, 10 a.m. - 6 p.m., commercial and private facilities.

Source: Downtown Parking and Traffic Survey, Department of Public Works, 1966.

TABLE 4. [illegible]

Transmission Area (Miles to [illegible])	Number of Short-term Workers (Under 1 Month)		Number of Long-term Workers (Over 1 Month)		Total [illegible]
	Men	Women	Men	Women	
1	274	[illegible]	[illegible]	[illegible]	[illegible]
2	1,177	[illegible]	1,180	[illegible]	[illegible]
3	2,044	[illegible]	[illegible]	1,447	[illegible]
4	[illegible]	[illegible]	630	[illegible]	[illegible]
5	720	[illegible]	720	[illegible]	[illegible]
6	85	[illegible]	[illegible]	120	[illegible]
7	33	[illegible]	31	[illegible]	[illegible]
8	[illegible]	[illegible]	1,06	[illegible]	[illegible]
9	190	[illegible]	[illegible]	[illegible]	[illegible]
10	1,[illegible]	[illegible]	2,[illegible]	[illegible]	11,[illegible]
11	781	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	11	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	164	[illegible]
16	[illegible]	[illegible]	[illegible]	121	[illegible]
Total	[illegible] (77,[illegible])	[illegible]	10,[illegible]	[illegible] (11,[illegible])	[illegible]

* On a weekday, 10 a.m. - 5 p.m., commercial and private facilities.

Source: Operation Training and Disaster-Survey, Department of Public Works, 1966.

By functional area, long term parkers varied from 24 percent of the total for the area (#7-Chinatown) to 82 percent of the total for the area (#11-South of Market-East). In the retail area (#8), short term -- under 4 hours -- parkers accounted for 69 percent of all parkers, while in the financial-administrative area (#8) they accounted for 42 percent of all parkers.

3. Off-street spaces - Outside the Downtown

a. Institutional

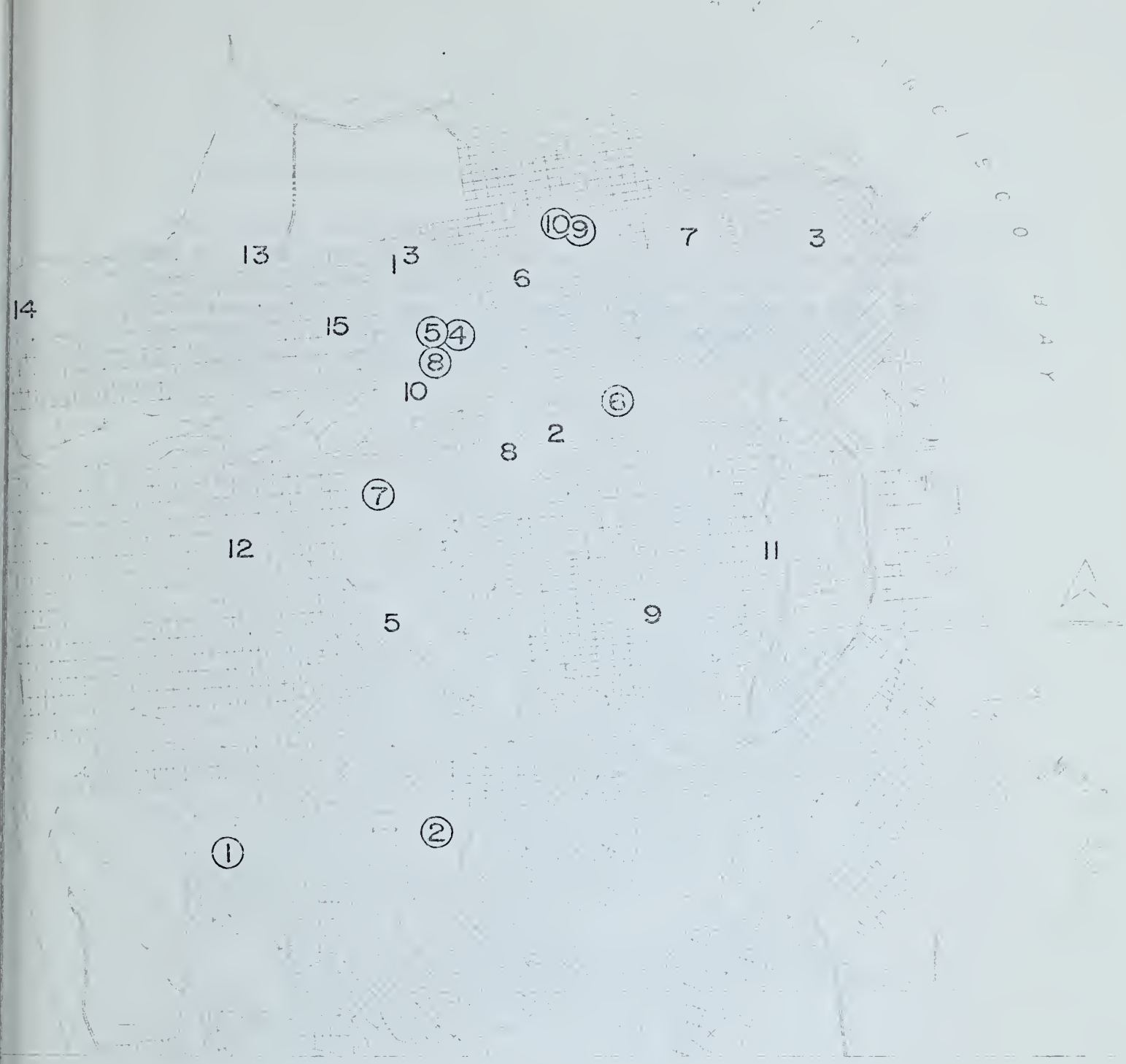
Parking provided by hospitals, medical office centers, universities and colleges constitute a substantial number of off-street parking spaces outside the downtown area of San Francisco. An inventory compiled by the Department of City Planning shows that some 11,160 spaces are provided in lots and garages at 25 institutions. Approximately 1000 more spaces are planned to be added within the next several years by various institutions. These institutions are indicated on Map 7, with the number of spaces available at each institution given in parenthesis. A complete inventory giving location, number of stalls and type of facility, restrictions, fees and other information is contained in the Appendix to this report.

In general, this parking is inexpensive and in some cases, free. For instance, monthly parking fees at the U.C. Medical Center are $18, with rates in some lots as low as $9.50 a month for compact cars; semester fees at California State University of San Francisco are $15, while daily parking is $.25; parking is free for faculty and included in the price of a student body card at City College. Short term parking is, in comparison to long term parking, considerably more expensive per hour. At St. Francis Memorial Hospital, a lot space is $.75 for two hours, at Pacific Medical Center the fee is $.45 for half an hour; at Children's Hospital, the fee for an hour is $.50. Physicians often do not pay for parking provided at hospitals and medical centers; faculty parking also is free at several universities.

b. Fisherman's Wharf portion of the Northern Waterfront

Fisherman's Wharf (which includes the area bounded by Van Ness, Bay Street and the San Francisco Bay) is a major activity center outside the downtown area. Although it is perceived as serving primarily as a tourist attraction and the center of San Francisco's commercial and sports fishing fleet, it also serves as a large employment center and potential site for additional major commercial facilities on existing bay piers.

An inventory of off-street parking in the Fisherman's Wharf area was done as a part of a traffic survey by the Departments of Public Works and City Planning in September, 1975. There are 4,874 off-street, non-residential parking spaces available. Of this number, 3,387 or 69 percent, are available to the public. Private parking (basically for motels and office buildings) accounts for 1,487 spaces. Of the publicly available spaces, 67 percent -- 2,279 -- have been built since 1969. A complete listing of the facilities, with number of spaces, locations and fees is included in the Appendix to this report.



PARKING PROVIDED BY INSTITUTIONS IN SAN FRANCISCO

Map 7

COLLEGES & UNIVERSITIES	No. Spaces
1 Calif. State Univ. San Francisco	2200
2 City College of San Francisco	1727
3 Golden Gate University	0
4 Lincoln University	33
5 Lone Mountain College	245
6 Univ. Calif Extension	205
7 Univ. Calif. Medical Center	1515
8 Univ. San Francisco	574
9. Univ. Pacific School of Dentistry	144
10. Univ. Pacific Medical Center	420

HOSPITALS	No. Spaces
1. Children's Hosp.	233
2. Ralph K. Davies-Franklin Hosp.	213
3. Hahnemann Hosp.	133
4. Kaiser Foundation Hosp.	414
5. Laguna Honda Hosp.	366
6. Mt. Zion Hosp.	186
7. St. Francis Hosp.	170
8. St. Joseph's Hosp.	40
9. St. Luke's Hosp.	126
10. St. Mary's Hosp.	130
11. San Francisco General Hosp.	385
12. Shriner's Hosp. for Crippled Children	16
13. U.S Public Health Service Hosp.	500
14. Veteran's Administration Hosp.	876
15. French Hosp.	312
TOTAL	11,163

Source: Survey by San Francisco Dept. City Planning

c. Parking Authority Neighborhood Parking Lots and Garages

The Parking Authority has 21 neighborhood parking lots comprising 824 spaces and 2 garages with 1013 spaces located in various neighborhood shopping districts, in addition to its downtown garages. The lots are metered and self-park, with no monthly parking, and have been financed by the City's Off-Street Parking Fund. The complete listing is contained in the Appendix to this report.

4. Off-Street Spaces - Citywide (non-residential)

An inventory of all existing off-street, non-residential, spaces indicates that there are approximately 116,000 spaces available throughout the city, including downtown, Fisherman's Wharf and institutional facilities (this figure does not include parking in the Presidio of San Francisco, a U. S. military installation). This inventory was in part compiled by utilizing a land use inventory done by the Department of City Planning in 1969 and filed on a computer tape. With the exception of hotel and motel parking, the inventory listed off-street non-residential parking facilities as principal or accessory land uses, measured by acre. This information was retrieved from the tape and a factor of square feet per parking space applied to determine the number of parking spaces by block in the city. Motel and hotel parking outside of the downtown area was determined by using Sanborn maps and other sources of information. The citywide total obtained from the land use tape was adjusted by subtracting those blocks covered by other inventories, such as the downtown, Fisherman's Wharf and institutional, and checked against aerial photographs for accuracy. While the land use inventory is 5 years old, the areas where significant changes in the parking inventory may have occurred -- notably downtown -- were surveyed as recently as September of this year. By utilizing these surveys, these changes are reflected and therefore the final number provides a citywide off-street parking inventory that may be considered indicative of the off-street supply, subject to an error of perhaps 10 percent.

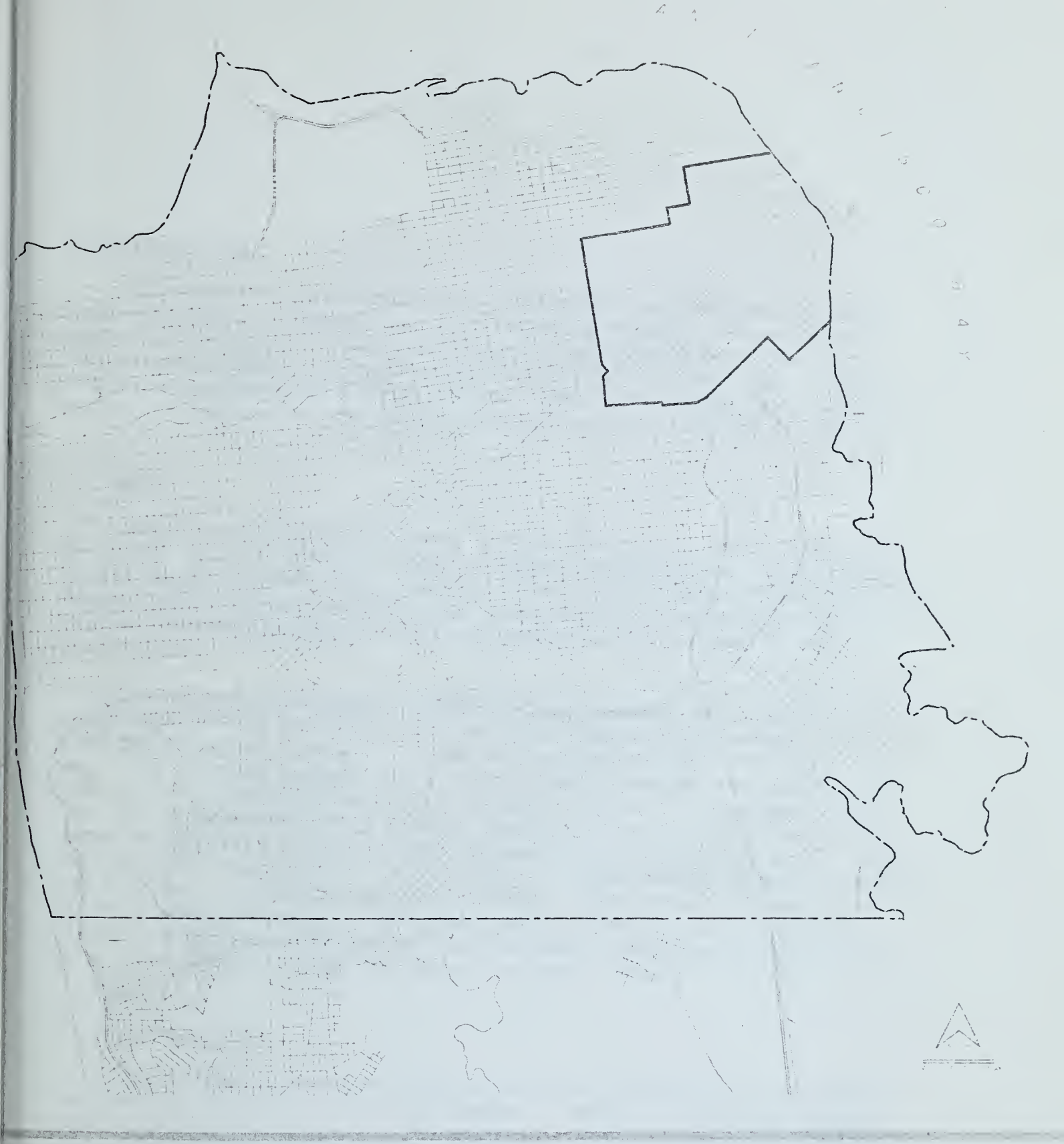
VEHICLE MILES TRAVELED (VMT)

Data on VMT was derived from three sources: The 1959 Trafficways Reappraisal, the San Francisco Downtown Parking and Traffic Survey, and the Bay Area Transportation Survey. The information is for the year 1965.

The San Francisco Downtown area generated an estimated 2,100,000 daily vehicle miles of travel. In all of San Francisco, the estimated daily VMT was 6,400,000, and in the Bay Area, 60,000,000. In percentage terms, the Downtown area generates 3.5% of the total daily regional vehicular travel, equal to a third of the total travel in San Francisco.

TRANSPORTATION SYSTEMS - PATRONAGE AND CAPACITY

An analysis of existing 2 hour peak roadway loads and transit patronage was made in two areas: the boundary of the city's Metropolitan Traffic District (MTD) and the periphery of the city. An analysis of the capacity of the systems (essentially the potential of the system to carry people) was done on a two hour basis. It should be noted that the systems -- especially the transit system -- do not now operate at full capacity for the entire two hour "peak" period. Rather, a peak within this two hours is the pattern, with either end of the two hour period less fully utilized. However, in order to indicate the potential of the systems to handle "staggered" work hour trip spreads, it is reasonable to use a two hour period.



TRANSPORTATION SYSTEM ANALYSIS BOUNDARIES Map 8

Metropolitan Traffic District

City Boundary

Transit Systems

San Francisco is served by one city transit system, the Municipal Railway (Muni), in addition to five intercity systems. Three of these intercity systems are publically operated and subsidized -- Bay Area Rapid Transit (BART), Alameda-Contra Costa County Transit (AC), and the Golden Gate Bridge and Transit District (GG). Two systems are privately owned and operated -- the Southern Pacific Railway (SP) and Greyhound.

1. BART

BART is a regional rail rapid transit system that started operation two years ago. It provides service between San Francisco, Alameda and Contra Costa Counties, with 3 stations now open on Market Street that give direct access to the most intensely developed sections of San Francisco's central business district. A fourth station will be opened at the Embarcadero.

The existing ridership on BART transbay (between the Alameda-Contra Costa Counties and San Francisco) is 10,080 (peak 2 hour period, 1 way). From the Daly City direction, 8,500 persons are carried in the peak, one way. The existing seated capacity for transbay service and for Daly City service is 10,080 for each during the peak 2 hours. In the near future, when the Richmond-Daly City line is opened, the seated capacity transbay and from Daly City will be 14,400 for each during the peak 2 hours. When BART is fully operational, it will offer a 43,000 seated capacity transbay and from Daly City during the peak 2 hours. With a load factor of 1.5 (150% of seated capacity), BART could carry 62,800 passengers in the Transbay direction (East Bay to San Francisco) and the same number from Daly City toward the East Bay during the peak 2 hours.

2. AC Transit

AC provides bus service from the East Bay terminating at the Transbay Terminal at First and Mission Streets. During the two hour evening peak period AC now carries 11,092 passengers from San Francisco on buses with a total seated capacity of 12,200. The future capacity of AC relative to transbay service depends upon the ridership characteristics of BART when it becomes fully operational. A number of route and schedule adjustments will be made by AC to provide connecting service to BART, making it difficult to project the AC Transit service capacity to San Francisco in the year 2000. The Transbay Terminal Transportation Study* prepared for the State Toll Bridge Authority includes estimates of a demand for 10,290

* Transbay Transit Terminal Transportation Study, Summary Report, Barton-Aschman Associates, Inc., 1974.

one way person trips to be carried by AC Transit in 1995, only slightly less than what is being carried now. Projections in the study indicate that by 1995, AC Transit daily transbay ridership will equal or even exceed current levels.

3. Golden Gate Bridge and Transit District

The District provides transit service by both bus and ferry to San Francisco's downtown and civic center areas. Some 7071 persons travel by bus from San Francisco during the peak 2 hour period, when the seated capacity id 8,550. The ferry has a peak 2 hour capacity of 1164 from the city, but carries only 425.

The major addition to the capacity of this system will be 3 new 636 passenger ferries. In the peak two hour period, 3816 persons can be ferried from the city. The district plans to put 20 buses (already purchased) into service as feeder to the ferries, and may order up to 15 articulated buses that will also be used to provide feeder service. Expansion of the bus fleet capacity into San Francisco beyond 1980 has not yet been determined, although a study of expansion alternatives has been completed.

4. Southern Pacific

Southern Pacific provides commuter rail service between San Jose and San Francisco on the eastern side of the peninsula. In the peak two hour afternoon period, 6,071 passengers leave San Francisco by SP on 11 trains with a seated capacity of some 7,600.

The future capacity of this system is not known. A recent upgrading study completed by MTC indicates that a major upgrading of SP commuter service could provide a 2 hour seated capacity of 26-30,000 persons at a capital cost of $90.5 to $106.5 million (1974 dollars) and an annual operating cost of $9 million. Another alternative involving a minor upgrading of service would cost $1 million and could increase service by 10%.

The future capacity of this system will depend in part upon the form of transit ultimately provided in San Mateo and Santa Clara counties.

5. San Francisco Municipal Railway (Muni)

The Municipal Railway provides services to more than 442,000 persons daily (this includes Fast Pass, BART discount and transfer passengers). According to an operations and marketing study being done by a consultant to Muni, these estimated ridership figures based on revenue may be 10 percent lower than the actual patronage.

Capacity and ridership figures for Muni on a peak and non-peak basis to specific areas of the city are difficult to calculate because of the lack of line and point patronage figures. However, according to recent cordon counts conducted by the Department of Public Works, the patronage on the lines leaving the Metropolitan Traffic District during the evening peak (as defined on Map 8) is approximately 53,000. The scheduled seated capacity during this two hour peak is approximately 57,000.

Muni's transit improvement program and other related projects will result in approximately the same number of seats available on the trolley bus and motor coach segment of the system. However, the Muni Metro, which will replace the existing PCC street cars on the streetcar routes will not only have more available seats but will also have a significantly greater capacity. The peak 20 minute capacity of the system is estimated by Muni to be 4450 passengers. The peak hour capacity will be approximately 12,000 passengers. The streetcars are now carrying 6500-7000 passengers, which is their capacity. Thus the Muni Metro system will be able to carry 5000 more passengers in the peak hour than the existing streetcar system.

The capacity of the motor and trolley coach segments is difficult to determine as it depends upon route assignments, length of trips and adjustment of routes resulting from BART and Muni Metro service. The prospect for more service capacity and reliability is good, given new equipment and better maintenance schedules.

The existing patronage for the various transit systems, along with the future capacities are summarized in Table 6. It should be noted that although the ultimate capacities of the rail systems are fixed by train length and minimum headways permitted by the technology of the systems, the capacity of the bus systems is capable of expansion and is basically limited only by the amount of money available and political decisions as to how that capacity should be expanded.

TABLE 6. TRANSIT SYSTEMS SUMMARY OF RIDERSHIP AND CAPACITY*

SYSTEM	EXISTING RIDERSHIP	EXISTING PEAK CAPACITY	NEAR FUTURE PEAK CAPACITY	ULTIMATE PEAK CAPACITY	CURRENT AVAILABLE PEAK CAPACITY NOT BEING UTILIZED	NUMBER OF NEW TRIPS THAT CAN BE ACCOMMODATED IN THE FUTURE
BART	TRANSBAY: 10,080 (peak 2 hr)	(6 minute headway, 7 car trains): TRANSBAY: Peak 2 hr: 10,080 (Seated) 15,120 (1.5 load factor)	(With the initiation of the Richmond-Daly City line there will be a 4 minute head-way with 7 car trains) TRANSBAY: Peak 2 hr: 14,400 21,600 (1.5 load factor)	(2 min. headway, 10 car trains): TRANSBAY: Peak 2 hr: 43,000 (Seated) 62,800 (1.5 load factor)	TRANSBAY: 5040 (Standing-2 hr peak)	TRANSBAY: Peak 2 hr- Near Future 4320 (Seated) 11,520 (1.5 load factor) Peak 2 hr: Ultimate 32,920 (Seated) 52,720 (1.5 load factor)
	DALY CITY: 8500 (peak 2 hr)	DALY CITY: Same as Transbay	DALY CITY: Same as Transbay	DALY CITY: Same as Transbay	DALY CITY: 6620 (standing 2 hr peak)	DALY CITY: Peak 2 hr: Near future 5900 (Seated) 13,100 (1.5 load factor) Peak 2 hr: Ultimate 34,500 (Seated) 54,300 (1.5 load factor)
AC TRANSIT	11,092 (Seated, peak 2 hr, 1 way)	12,000 (Seated peak 2 hr, 1 way)	NOT KNOWN	NOT KNOWN	908 (Seated peak, 2 hr, 1 way)	NOT KNOWN

*All Data Obtained from Transit Operators

SYSTEM	EXISTING RIDERSHIP	EXISTING PEAK CAPACITY	NEAR FUTURE PEAK CAPACITY	ULTIMATE PEAK CAPACITY	CURRENT AVAILABLE PEAK CAPACITY NOT BEING UTILIZED	NUMBER OF NEW TRIPS THAT CAN BE ACCOMMODATED IN THE FUTURE
GOLDEN GATE BRIDGE AND TRANSIT DISTRICT	BUS: 7071 (Seated, peak 2 hr, 1 way) FERRY: 425 (peak 2 hr, 1 way)	BUS: 8550 (Seated, peak, 2 hr, 1 way) FERRY: 1164	BUS: Capacity to city beyond 1980 not yet determined. Additional ferry feeder service planned in Marin & Sonoma Counties. FERRY: 3816 on 3-636 passenger ferries, assuming 2 trips during the peak 2 hrs.	NOT KNOWN	BUS: 1479 (seated, peak 2 hr, 1 way) FERRY: 739	BUS: No significant change in short run; District policy is to accommodate new demands. FERRY: 3816
MUNI	442,655 Daily* 52,976 (Peak, 2 hr, 1 way)	MTD: 56,698 (Seated, peak 2 hr) 70,872 (1.25 load factor)	COACH SYSTEM: NOT KNOWN MUNI METRO: 12,000 in peak hour, one-way	NOT KNOWN MUNI METRO: 12,000 in peak hour, one-way	14,174	MUNI METRO: Will carry 10,000 more passengers in peak 2 hours than the streetcars now carry.
SOUTHERN PACIFIC	6071 (Peak, 2 hr, 1 way)	7620 (Seated, peak 2 hr, 1 way)		UNKNOWN	1549	UNKNOWN
GREY-HOUND	PENINSULA: 1825 (Peak, 2 hr, 1 way) EAST BAY: 1700	PENINSULA: 1450 EAST BAY: 1450		UNKNOWN	--	UNKNOWN

*This figure may be underestimated by as much as 10 percent.

	CURRENT AVAILABLE PEAK CAPACITY NOT BEING UTILIZED	NUMBER OF NEW TRIPS THAT CAN BE ACCOMMODATED IN THE FUTURE
TOTAL FOR ALL SYSTEMS:	30,509 current available 2 hr peak capacity to downtown San Francisco not being utilized.	Additional Capacity Available:* -Near Future 38,436 (peak 2 hrs, assuming a 1.5 load factor on BART) -Ultimate 120,836 (peak 2 hrs, assuming a 1.5 load factor on BART) *It should be noted that this capacity is at the MTD; full utilization of the capacity at the City boundary is in question because of the access problems at the Daly City BART station.

Roadway Systems

San Francisco's roadway system consists of 907 miles of city streets and 31 miles of state and federal highways, 20 miles of which are freeways. Most City streets are primarily for local neighborhood access and carry vehicular loads of less than 3000 per day.

On the other hand, the arterial and freeway systems carry the bulk of the traffic load with daily vehicular volumes ranging as high as 200,000. The estimated split in vehicular load in 1975 was 2,000,000 vehicle miles traveled daily on freeways, and 5,400,000 vehicle miles traveled daily on city streets.

The natural topography of the City channels traffic into well-defined corridors and at its periphery the Pacific Ocean, San Francisco Bay and San Bruno Mountains further limit these corridors with only 50 traffic lanes being available for entry and exit.

As indicated, the analysis of the roadway system was made at the boundary of the MTD and at the ity's periphery for a two hour period. The MTD traffic loads were derived from a 1971 Cordon Count* and the external traffic was derived from recent counts by the California Department of Transportation and the San Francisco Department of Public Works.

Besides the assumption of a two hour capacity, another assumption was made -- that except for a 4th Street on-ramp to I-280 and a possible connection of I-280 to the Bay Bridge there would be no new principal roadway construction by the year 2000. Also, no new operational techniques of the reversible type such as reversible lanes or reversible one-way streets were considered. (It was assumed that the Golden Gate Bridge would retain its present mode of operation.)

The results are shown in Tables 7, 8, and 9 on the following page.

*The methodology is explained in the Appendix to this report.

TABLE 7. LOAD-CAPACITY COMPARISON

4 - 6 P.M., Outbound (in Vehicles)

MTD			City Boundary		
Existing Load	Existing Capacity	Difference	Existing Load	Existing Capacity	Difference
103,453	149,740	46,290	59,400	81,800	22,400

The variation of this relationship by direction at the MTD boundary is shown in Table 8 and at the city's boundary in Table 9.

TABLE 8. MTD LOAD-CAPACITY COMPARISON

4 - 6 P.M., Outbound (in Vehicles)

	North	West	South	East
Existing Load	24,624	24,680	39,239	14,910
Existing Capacity	31,781	37,989	62,970	17,000
Difference	7,157	13,309	23,731	2,090

TABLE 9. CITY BOUNDARY LOAD-CAPACITY COMPARISON

4 - 6 P.M., Outbound (in Vehicles)

	North	South	East
Existing Load	10,730	33,760	14,910
Existing Capacity	13,600	51,200	17,000
Difference	2,870	17,440	2,090

At the MTD boundary, a fully utilized two hour peak period could result in accommodating 45% more vehicles; at the City boundary 38% more vehicles could be accommodated. At the critical Golden Gate Bridge and Bay Bridge gateways, however, the increase could only be 27% and 14%, respectively.

In terms of additional persons carried by non-transit vehicles, the increase could be 69,000 at the MTD (assuming 1.5 persons per auto) and 31,000 at the City boundary (assuming 1.4 persons per auto).

INVENTORY OF EXISTING CONTROLS ON PARKING

This section summarizes an inventory made of local governmental regulations governing parking. The complete inventory is contained in the Appendix to this report.

Controls of varying nature are contained in the Charter and various municipal and administrative codes. In addition, a number of policies regarding parking are to be found in the City's Master Plan and in plans developed by other governmental jurisdictions, such as the Bay Conservation and Development Commission.

The most striking characteristic of the parking controls is the multiplicity of actors at the city level having jurisdiction over the provision of parking. Although the Planning Code is the sole control for the amount and location of new required off-street parking and the permitted areas where new facilities may be located, a number of city departments, agencies and commissions have the power to decide if and when City owned or managed parking should be provided -- and how much it should cost. For instance, to specify just a few, the Recreation and Park Board has authority over parking within city parks, the Airport Commission has jurisdiction over parking at the airport, and the Board of Supervisors determines parking meter rates and imposes parking taxes. The Parking Authority of San Francisco is charged with the responsibility of investigating and recommending to the Board of Supervisors new off-street parking facilities throughout the City. Facilities approved by the Supervisors are built either through private development, through a combination of public land acquisition and private construction of facilities or through use of the off-street Parking Fund which receives revenues from parking meters. There is then, no one single entity responsible for decision making regarding the provision and management of the parking supply in San Francisco.

Another characteristic that becomes apparent from an examination of the Planning Code is that there exist a number of areas of the City in which the location and/or provision of off-street parking are already controlled. For instance, in the entire C-3 (downtown) zoning district, off-street parking (except for dwellings) is not required of new construction, and any major parking garage proposed for this district must go through the conditional use review procedure of the City Planning Commission. The exceptions to this review procedure are public garages proposed by a city agency such as the Parking Authority or as a part of some public facility. Instead, in these situations, the proposed facility is reviewed by the City Planning Commission under the Master Plan Review provision of the Charter. The principal difference between Master Plan review and the conditional use procedure is that the former is advisory only, while the latter does allow the Commission to attach conditions to the approval or to deny the project.

In the C-3 district, parking provided accessory to a new development is limited to seven percent of the gross floor area (excepting dwellings). Parking which exceeds the seven percent is classified as a conditional use subject to the review of the City Planning Commission. Several of the major office buildings built in the C-3 districts since this provision was adopted in 1968 have provided no parking on the site or less than seven percent of the floor area. Four major office buildings now proposed for the downtown area will have no parking, and two others will have less than the seven percent allowed. In eight conditional use applications reviewed since 1968 in which the applicant requested more than the seven percent allowed for parking, all were approved.

Proposed parking lots in the C-3-O, C-3-R and C-3-G districts are also subject to conditional use review (proposed lots in the C-3-S district are not). Out of 14 applications for parking lots in the C-3 districts reviewed by the Planning Commission since 1968, 11 lots comprising 506 spaces were approved.

The Northern Waterfront area, the Washington-Broadway area and the Nob Hill area are all designated in the Planning Code as areas where there are particular reasons for, respectively, reduction or elimination of required parking or control of new parking facilities through conditional use review. These areas are shown on Map 9.

There are no zoning districts (with the exception of residential districts or P districts) where parking facilities are prohibited. Parking lots are permitted uses in C-2, C-3-S, C-M, M-1 and M-2 districts; conditional uses in C-1, C-3-O, C-3-R and C-3-G districts. Parking garages open to the public are permitted uses in C-2, C-M, M-1 and M-2 districts; conditional uses in C-1 and C-3 districts (as previously mentioned).

In terms of the number of required off-street parking spaces in new development, a national review of zoning requirements for parking done

PROVISIONS REGARDING PARKING – EXISTING PLANNING CODE DISTRICTS

Map 9

DISTRICTS	PLANNING CODE SECTIONS
1 NORTHERN WATERFRONT SPECIAL USE DISTRICT NO. 1	146(f), 240.1
2 NORTHERN WATERFRONT SPECIAL USE DISTRICT NO. 2	240.2
3 NORTHERN WATERFRONT SPECIAL USE DISTRICT NO. 3	240.3
4 WASHINGTON-BROADWAY SPECIAL USE DISTRICTS NOS. 1 & 2	146, 239
5 C-3 DISTRICTS	143
6 NOB HILL SPECIAL USE DISTRICT	238

in 1972* indicates that the Planning Code's requirements for off-street parking and loading spaces are generally at the minimum end of the range of requirements for various land uses.

In the case of residential requirements, however, the ratio in San Francisco of 1 space per dwelling unit even in large multifamily units, is higher than in cities such as Boston, Baltimore, Chicago and New York. The only instances where parking requirements are reduced as density increases are in R-5-C, C-3-G and C-3-S districts, and for housing for the elderly built through State or Federal programs. For the majority of housing units now built in San Francisco, then, a 1 for 1 ratio obtains.

The amount of accessory parking allowed is treated in Section 116.2 of the Planning Code. This section allows accessory parking of 3 spaces where the Code requires 1; 4 spaces where the Code requires 2; 150 percent of the required number where 3 or more spaces are required; and 15 spaces or 7% of the total gross floor area where no parking is required. Proposed parking for new development exceeding these amounts generally are classified as conditional uses and require Planning Commission review.

The various controls on parking, in addition to these mentioned above, are given in more detail in the appendix to this report. A summary of where the controls are located appears below.

1. Charter of the City and County of San Francisco

   a. Lease of park land by Recreation and Park Commission for subsurface parking facility.

   b. Powers and duties of Airport Commission.

   c. Approval of permits and licenses dependent upon zoning ordinances, powers of zoning administrator, variance procedures.

   d. Master Plan referral.

   e. Preparation and submission of capital improvement program.

2. Municipal Codes of the City and County of San Francisco

   a. Part III of the Municipal Code establishes a tax on occupancy of space in garages and lots.

   b. Planning Code - gives rules for determining off-street parking and loading requirements (number and size of spaces) for various land

* Zoning, Parking and Traffic, David K. Witheford and George E. Kanaan. Eno Foundation for Transportation, 1972.

uses, specifies where parking garages and lots may be permitted in C and M districts, gives criteria for review of major parking garages in C-3 districts, exemptions from off-street parking and loading requirements in various districts of the city, among others.

c. Fire Code - indicates that automobile parking lots and garages (with the exception of residential uses or owner-provided parking for stores, businesses, etc.) cannot be established, operated or maintained without a permit from the Fire Department. Such permit will not be issued without prior approval from the Department of Public Works.

d. Park Code - gives Board of Park Commissioners full power and authority to set aside suitable parking space within city parks.

e. Traffic Code - sets forth provisions for establishment of on-street parking controls and municipal off-street parking lots, installation, maintenance and hours of operation of parking meters in municipal off-street parking lots, establishment of special truck loading zones and bus loading zones, curb parking regulations, establishment of parking meter zones, use of parking meter funds, among others.

f. Police Code - establishes Port Commission as regulator of parking on wharves, establishes public stands for licensed taxicabs and other vehicles for hire, defines role of Department of Public Works in granting permits for such stands.

3. Administrative Code of City and County of San Francisco

a. Establishes and defines powers of Parking Authority.

b. Establishes procedure for financing Public Facilities, specifically the Civic Center Parking Garage.

c. Establishes procedure for Environmental Review of proposed projects.

4. Various Ordinances adopted by the Board of Supervisors

a. Ordinance 150-75 - establishes a temporary parking control area in the Yerba Buena Center Redevelopment project area.

5. State Legislation

A survey of state enabling legislation indicates four laws governing parking: 1) Vehicle Parking District Law of 1943; 2) Parking Law of 1949; 3) Parking District Law of 1951; and 4) Parking and Business Improvement Area Law of 1965. These laws do not directly regulate parking in San Francisco, but rather give the City the authority to establish various types of parking districts and the authority to issue bonds and impose taxation for the prupose of funding parking projects.

Another section of state enabling legislation which relates to parking is the Community Redevelopment Law, which authorizes local Redevelopment Agencies and defines their powers. The authority to design and construct parking facilities is implied in a redevelopment agency's authority to prepare and carry out plans for the "improvement, rehabilitation and redevelopment of blighted areas."

PROJECTIONS

Alternate projections of parking supply were made to the year 2000. These projections were based upon (1) employment projections and (2) past trends of parking space. Projections were made on the basis of current patterns of auto and transit usage. In addition, projections were made based on possible changes in those patterns. Emphasis was placed on the downtown area, because some 66-71% of the new employment to the year 2000 is expected to be located there. The remainder, some 32,000 to 52,000 jobs, is expected to be situated outside this area, with the number of jobs dependent chiefly on growth in medical and educational institutions and services. Some 85 percent of the projected increase in these types of jobs for the city as a whole in the year 2000 is expected to be located outside of the major commercial and industrial districts -- that is, in areas located within or at the edge of residential neighborhoods.

Summary

By 1980, new floor area built in downtown San Francisco could result in some 11,000 more persons in 8200 automobiles entering the downtown area for work trip purposes, if the same patterns of auto and transit usage continue and there is no intervention by the City to limit additions to the parking supply. By the year 2000, the growth in employment could generate from 10,100 to 42,600 more automobiles entering downtown for work trip purposes, depending upon how much employment growth actually occurs and how much of a shift to transit as the way to travel to work downtown occurs. The lowest number corresponds to a low employment projection and a shift of more workers to transit.

Under a high employment projection and current auto occupancy rates, no additions to the parking supply would be required if transit usage could be increased to 68% and auto usage reduced to 32%. Under a low

employment projection, transit would have to carry 64% and autos 36% of the persons arriving downtown.

A significant change could be affected if auto occupancy were increased, meaning that the shift to transit would not have to be as great. For instance, if the average number of persons per car increased to two from the present 1.3 to 1.5,* 49% of the people could arrive downtown by auto instead of 32% (under the high employment projection.) Under the low employment projection, 55% of people arriving downtown could do so by auto, if 2 persons traveled in each car.

Alternate Projections

1. Downtown Parking Impacts Based on Projected New Employment - 1980

In order to determine for the short run -- 5 years -- the number of automobiles used for work trips that could be expected in the downtown area, employment figures were generated from new floor area that is anticipated to be added during the next 5 years. An inventory of all proposed projects that are in the city permit process or in project review in the Department of City Planning was made, indicating that the following new floor area can be expected in the next five years:

Net new office space:	8,858,552 sq. ft. (gross floor area)
new retail space:	340,600 sq. ft.

This floor area can be expected to generate more than 26,000 new jobs, as indicated in Table 10.

If existing residential patterns, auto occupancy and modal splits continue, 11,000 additional persons in some 8,278 automobiles might be entering this area for work trip purposes and seeking parking by 1980, as indicated in Table 11. Again, this projection should be considered an indication of parking space increase if no intervention by the City to limit or slow growth in the parking space supply takes place and if no change in the proportion of workers using transit occurs. It can be anticipated that there may be a higher proportion of persons using transit as the various systems finish their improvement programs.

2. Downtown Parking Impacts Based on Projected New Employment - Year 2000

Parking impacts for the year 2000 were generated for the downtown by using low and high employment projections prepared for the Department of City Planning. These projected net changes in employment are indicated in Table 12 for seven major commercial and industrial districts and for the

*Auto occupancy levels as high as 1.57 have been found entering downtown on city streets in recent Department of Public Works surveys.

TABLE 10. PERSON WORK TRIPS - 7-9 a.m. - PRIVATE OFFICE BUILDINGS - 1980

Multi-Tenant	Trip Factor[1]	Daily A.M. Peak Work Trips	Single Tenant	Trip Factor[1]	Daily A.M. Work Trips
7,483,732 sq.ft.GFA	2.66/1000 sq. ft.	19,906	1,374,820 GFA	4.53/1000 sq. ft.	6,227

Total person work trips 7-9 a.m.): 26,133

[1] from Urban Travel Patterns for Hospitals, Universities, Office Buildings, and Capitols, National Cooperative Highway Research Program Report 62, 1969.

* * * *

TABLE 11. AUTO USE GENERATED BY NEW EMPLOYMENT DOWNTOWN - 1980

Workers Living In	% of Total Workers	% of Workers	% Arriving by Auto	# of Autos[1]	% Arriving by Transit	# Transit Riders
San Francisco	61.1%	15,967	29%	3,561	57%	9,101
Alameda & Contra Costa Counties	13	3,397	58[2]	1,377	42[2]	1,426
Marin County	7	1,829	60[3]	844	40	731
San Mateo County	15	3,919	62[4]	1,869	38[4]	1,489
Outside SMSA	3.9	1,019	80[5]	627	20	203
Totals		26,131[6]		8,278		12,950

[1] Auto occupancy rates: 1.43 persons per car for Alameda & Contra Costa Counties, 1.3 elsewhere.

[2] From 1975 data obtained from State Division of Bay Toll Crossings, AC Transit and BART; for all of San Francisco

[3] From May 1975 average weekday counts, Golden Gate Bridge and Transportation District, for downtown destinations.

[4] Modal split in downtown from 1965 Bay Area Transportation Study. It should be noted that 1970 Journey to Work data indicates a 77.4% auto/22% transit split for San Mateo residents with destinations in San Francisco as a whole.

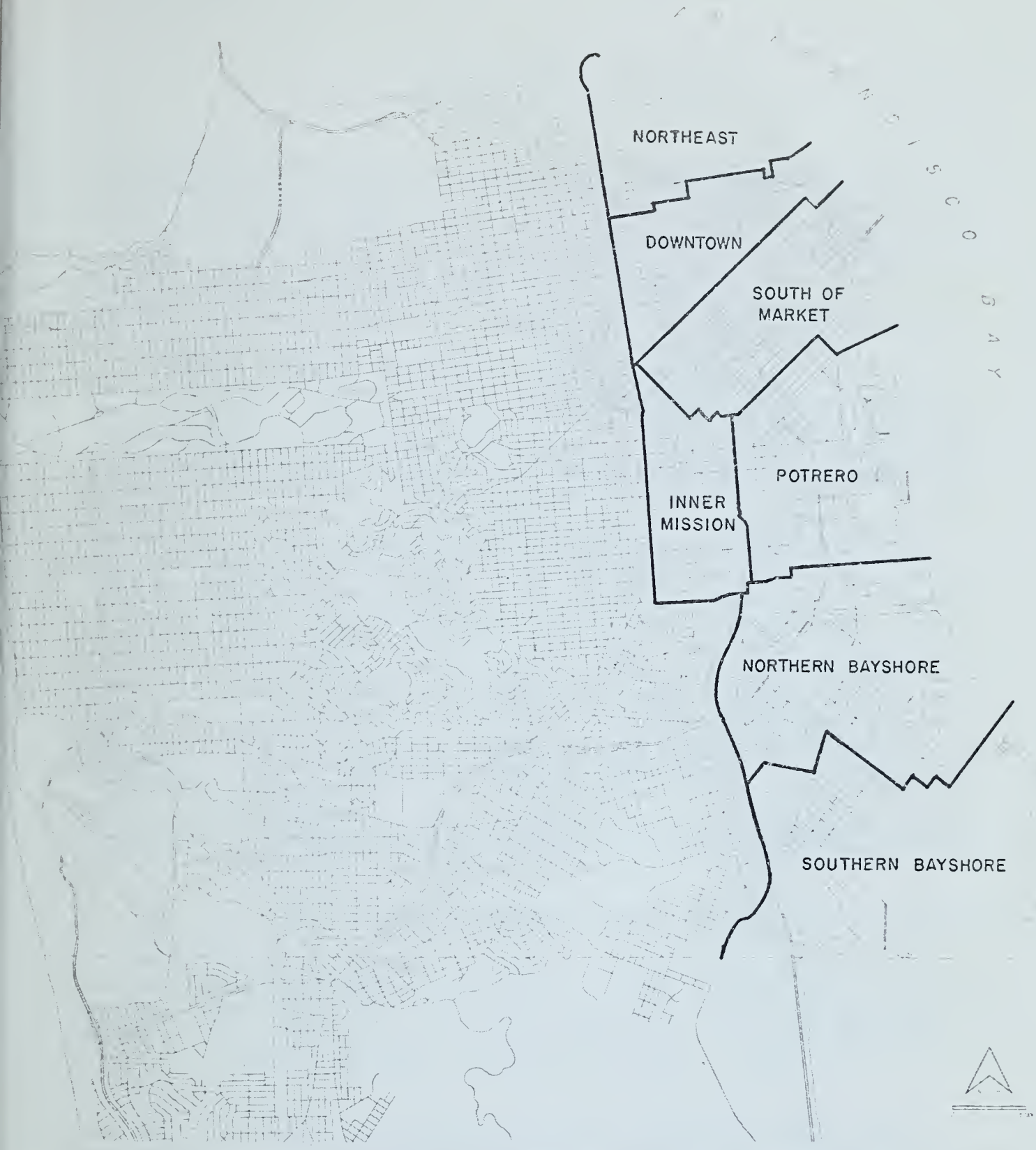
[5] Assume 80% auto/20% transit modal split.

[6] Does not equal total from Table 10 due to rounding.

TABLE 12. EMPLOYMENT*

	TRENDS			PROJECTED NET CHANGES		
				1973-	1973-2000	
	1965	1970	Change	1985	Low	High
1. Northeast District	20,902	24,934	4,032	4,943	7,300	11,670
a. Russian Hill-North Beach	5,289	7,490	2,201			
b. Van Ness-Polk Corridor	4,529	6,154	1,625			
c. Northern Waterfront	11,084	11,290	206			
2. Downtown (North of Market)	153,621	186,467	32,846	25,807	35,165	51,405
a. Financial, Administration and Retail District	93,674	107,187	13,513			
b. Civic Center	28,571	31,612	3,041			
3. South of Market	99,515	117,672	18,157	14,230	13,560	43,980
a. Market-Howard Corridor	62,771	74,483	10,712			
b. Rincon Area	17,850	23,067	5,217			
c. Howard-Harrison Corridor	8,296	9,097	801			
d. Harrison-Townsend Corridor	10,598	13,005	2,407			
4. Potrero District	16,304	12,557	(3,747)	(982)	(3,100)	1,425
a. China Basin	7,923	6,188	(1,735)			
b. Central Basin	8,381	6,369	(2,012)			
5. Inner Mission	20,983	19,966	(1,017)			
a. Northeast Industrial Zone	10,621	9,472	(1,149)			
b. East Mission	10,427	10,488	126	(298)	(2,215)	1,650
6. Northern Bayshore	15,081	15,663	582	(946)	(2,965)	(395)
a. Army Street-Apparel City-Produce Market	12,313	13,097	784			
b. Islais Creek	1,840	1,711	(129)			
c. India Basin	928	855	(73)			
7. Southern Bayshore Indistrial District	7,312	7,973	661	(289)	(1,025)	(320)
a. Paul-Williams Area	3,446	3,482	36			
b. South Basin	2,820	2,620	(200)			
c. Candlestick	1,046	1,871	825			
CITYWIDE	476,448	535,200	58,752	59,148	78,811	162,061

* from Commercial & Industrial Activity in San Francisco: Present Characteristics and Future Trends, Arthur D. Little, Inc., 5/75.



MAJOR COMMERCIAL AND INDUSTRIAL DISTRICTS Map 10

City as a whole for 1985 and the year 2000.* For the downtown area (which includes the areas both north of Market to Broadway and south of Market to Townsend), some 40,000 new jobs are projected by the year 1985; for the year 2000 the low projection indicates 48,725 and the high projection indicates 95,385 new jobs. For the year 2000, then, total employment in this area could range from 352,864 to 399,524 persons. Citywide, the net change would range from 59,148 to 162,061 jobs by the year 2000.

Employee residence distribution was determined by the use of population projections for San Francisco and information in the 1970 census, and two sets of modal splits reflecting different levels of transit ridership (corresponsing to the various transportation corridors used to reach San Francisco) were applied to obtain the number of autos and the number of transit passengers that might be entering downtown. The results are given in Table 13. Assuming the existing pattern of auto and transit usage, with no public policy intervention limiting parking, from 20,707 (low employment projection) to 42,614 (high employment projection) more autos could be expected to enter downtown on work trips. Assuming a substantial shift to transit among new employees, again with no public policy intervention limiting parking, 10,100 to 20,880 more autos could be expected. These employees would be destined for jobs within the downtown area and presumably would be desirous of parking their cars somewhere in this area. While some of the "demand" could be met in existing facilities that are not fully utilized, especially in the areas south of Market Street, to accommodate the low employment projection, high transit usage alternative would entail 5 garages the size of the Fifth and Mission parking facility. Under the high employment, existing auto occupancy and existing modal split alternative, 23 garages the size of the Fifth and Mission facility would be required to accommodate the increased number of automobiles.

3. Downtown - Year 2000 Total Employment Transit and Auto Usage (Modal Splits)

As indicated previously, projections of modal splits of the total downtown work force were also made, in order to determine what shift to transit and higher auto occupancies would have to be made if the City made a decision to limit the amount of long-term parking to that which currently exists. The results of these projections are given in Table 14.

The most interesting point made by these projections (which can be used only as a measure of relative change and comparison rather than as absolute measures of auto users and transit patronage) is that increasing auto occupancy levels to 2 persons per car from the current 1.43 and 1.3 can have a significant impact on the transit ridership required in order to limit the number of new long-term parking spaces downtown to the current inventory. Examining the total employment expected with the highest employment projection, 68% of the workers would have to utilize transit if auto occupancy did not increase over existing levels; only 51% transit ridership would be required with an auto occupancy rate of 2 persons per car. This difference becomes even more significant if the specific counties are examined. For instance, for workers from San Mateo and Santa Clara Counties, a transit ridership of 64% would be required if the auto occupancy

TABLE 13. AUTO USE GENERATED BY NEW EMPLOYMENT DOWNTOWN - YEAR 2000

(Area bounded by Broadway, Van Ness, Townsend, Embarcadero)

HIGH PROJECTION

COUNTY OF RESIDENCE	NO. OF WORKERS[2]	% ARRIVING BY AUTO - EXISTING PATTERN	NO. OF AUTOS[6]	ARRIVING BY AUTO - ASSUMING HIGHER TRANSIT USE	NO. OF AUTOS[7]
San Francisco	8,800	29%	42,614 (56,771 persons)	20%	20,880 (41,762 persons)
Alameda/ Contra Costa	25,975	58%[3]		35%	
Marin	14,720	60%[4]		40%	
San Mateo/ Santa Clara	35,500	62%[5]		50%	
Outside SMSA	10,390	80%		70%	
	95,385[1]				

LOW PROJECTION

San Francisco	8,800	Same as Above	20,707 (27,551 persons)	Same as Above	10,100 (21,561 persons)
Alameda/ Contra Costa	11,976				
Marin	6,788				
San Mateo/ Santa Clara	16,370				
Outside SMSA	4,791				
	48,725[1]				

1. Employment projections from Commercial & Industrial Activity in San Francisco: Present Characteristics and Future Trends, Arthur D. Little, Inc., 5/75

2. Residence distribution based upon population projections for San Francisco and worker resident information in 1970 Census (of non-resident employment in San Francisco, 19% live in Alameda County; 11%-Contra Costa; 17%-Marin County; 36%-San Mateo County; 12%-Napa, Sonoma, Solano and other; 5%-Santa Clara County).

3. From 1975 data obtained from State Division of Bay Toll crossings, AC Transit and BART; for all of San Francisco.

4. From May 1975 average weekday counts, Golden Gate Bridge & Transportation District, for downtown destinations.

5. Modal split in downtown from 1965 Bay Area Transportation Study. It should be noted that 1970 Journey to Work data indicates a 77.4% auto/22% transit modal split for San Mateo residents with destinations in San Francisco as a whole.

6. Auto occupancy rates: 1.43 persons per car for Alameda & Contra Costa Counties, 1.3 elsewhere.

7. Assumes auto occupancy rate of 2.0 persons per car.

TABLE 14. AUTO AND TRANSIT USAGE TO DOWNTOWN - TOTAL EMPLOYMENT, YEAR 2000*
(Assumption: Parking Supply available for all day parking held at 1975 levels and no increase in automobiles entering downtown for work purposes)

	At 1975 Auto Occupancy Rate				At 2 persons per Car			
County of Residence	% Transit	(Existing)	% Auto	(Existing)	% Transit	(Existing)	% Auto	(Existing)
High Employment Projection								
San Francisco	60%	(57%)**	28%	(29%)	57%	(57%)	28%	(29%)
Alameda/Contra Costa	66	(42)	34	(58)	53	(42)	47	(58)
Marin	65	(40)	35	(60)	47	(40)	53	(60)
San Mateo/Santa Clara	64	(38)	36	(62)	45	(38)	55	(62)
Outside SMSA	54	(20)	46	(80)	41	(20)	59	(80)
	68%	(62%)	32%	(38%)	51%		49%	
Low Employment Projection								
San Francisco	60%		28%		57		31	
Alameda/Contra Costa	57		43		39		61	
Marin	55	As	45	As	31	As	69	As
San Mateo/Santa Clara	54	Above	46	Above	29	Above	71	Above
Outside SMSA	40		60		9		91	
	64%		36%		45%		55%	

* The same assumptions used in Tables 11 and 13 regarding residence locations, employment, auto occupancy rates and modal splits are used here.

** Some 12% of San Francisco residents working in Downtown walk to work.

rate remains stable; 45% if an auto occupancy rate of 2 persons per car is achieved. Currently, 38% of the workers from these counties now utilize transit to downtown. It should be noted that the residents from the peninsula have the least transit alternatives available to them, and that there is no mechanism such as bridge tolls that could be used as an incentive to carpooling.

Overall, if the auto occupancy rates rise to 2 persons per car, transit ridership required for the high employment projection is 51%, for the low employment projection it is 45%.

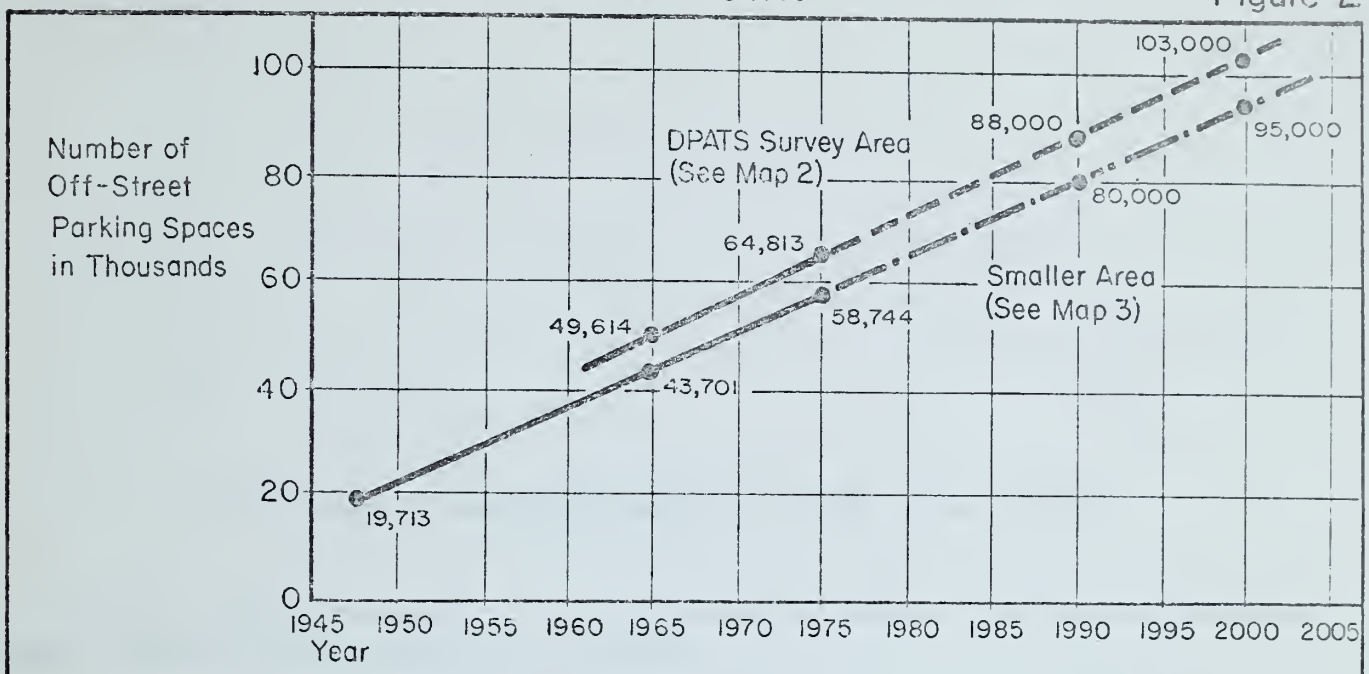
4. Downtown Parking Projections Based Upon Past Trends

Figure 2 indicates the growth in the past 10 to 25 years of the parking supply in the downtown area and the number of spaces that can be expected in the year 2000 if these growth rates continue. In the area surveyed in 1965 and again in 1975 for the Parking Management Plan, the inventory has increased from 49,614 spaces to 64,813 spaces. If the rate of growth in the last ten years were to continue, there would be 88,000 spaces in 1990 and 103,000 spaces by the year 2000. In the smaller area, where data is available as far back as 1945, the past growth rate would indicate a total supply of 80,000 spaces by 1990 and 95,000 by the year 2000.

Figure 3 indicates projected growth of the parking supply downtown based upon floor area. By the year 2000, if the ratio of parking spaces to floor area continues at the same ratio as in 1965, there would be 78,622 spaces, some 13,809 more spaces than in 1975.

STRAIGHT LINE PROJECTION
OF PARKING SPACE GROWTH DOWNTOWN

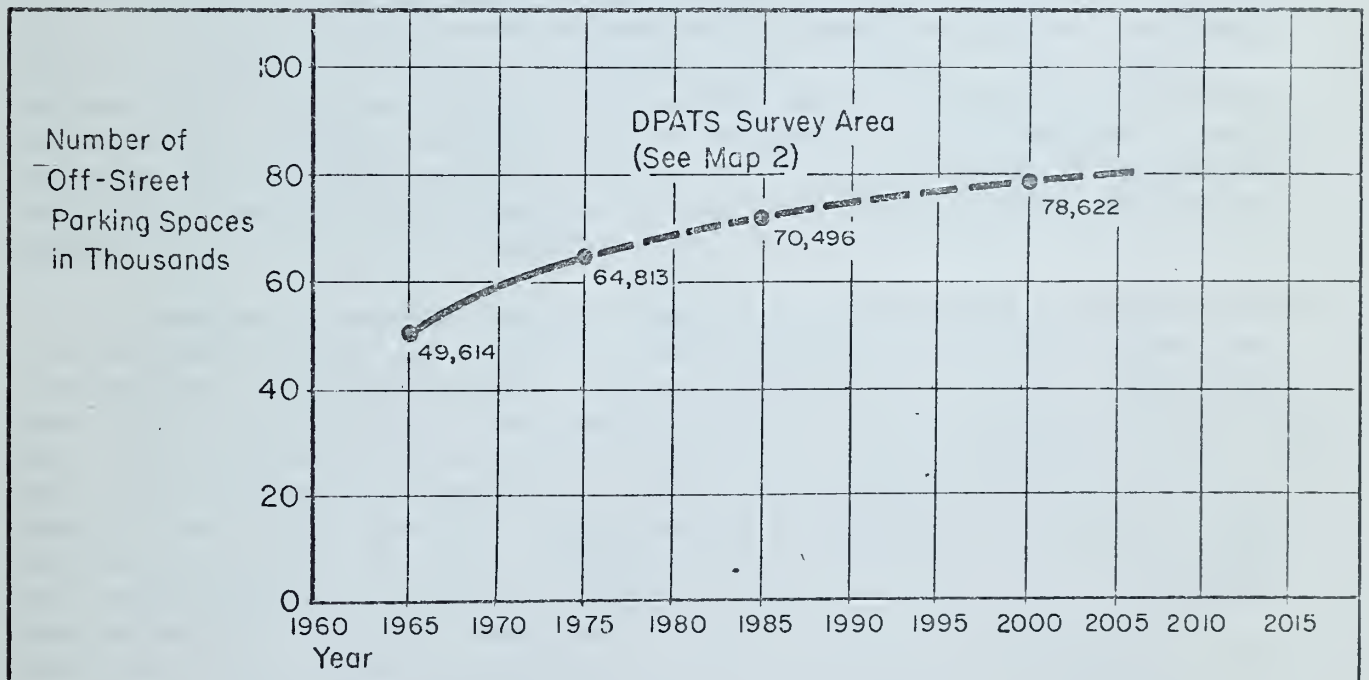
Figure 2



Source: San Francisco Department of Public Works

PROJECTION OF PARKING SPACE GROWTH
BASED ON FLOOR AREA · DOWNTOWN

Figure 3



Source: San Francisco Department of Public Works

OTHER PARKING MANAGEMENT EFFORTS IN THE UNITED STATES

This section presents a brief overview of some of the parking management efforts being made by other cities.

In California, San Diego and Los Angeles counties have both been working on parking management strategies. Los Angeles County, represented by the Southern California Association of Governments, has not yet completed its study leading to a Parking Management Plan. In San Diego, parking management has been consolidated with indirect source review analysis and transportation control strategies into a report entitled Transportation Management Tactics for Air Quality Improvement, prepared for the CPO (Comprehensive Planning Organization of the San Diego Retion). This report, still in the preliminary draft form, recommended six complimentary tactics in a strategy for transportation management including transit development, bicycle systems, gas taxes with subsidies for carpools, major employer carpool programs, communication substitutes for travel and an integrated Environmental-Indirect Resource review process of new development. Parking controls which offered positive incentives to carpooling were determined to be the most appropriate techniques in San Diego, where almost all parking except in the CBD is very cheap or free.

In Boston, a Downtown Parking Freeze was established in November 1972 (residential parking was exempted), and in October, 1973 this freeze was incorporated as a part of EPA's Transportation Control Plan. It provides that after this date the total quantity of commercial parking spaces available for use be maintained at the same amounts available prior to this date. This provision has been stayed by court order pending revision of the air quality data base. However, City agencies in Boston are quite interested in implementing the freeze regardless and are proceeding to develop plans for implementation, especially since the State is essentially delegating the authority on parking management to its cities. In Boston, the Redevelopment Agency will probably act as a "broker" for the parking supply with the Air Resources Board giving technical assistance. Although no

applications for new parking facilities have been received prospective developers have been advised that when the stay is lifted and the local plan is adopted, operation of some facilities may have to be curtailed in some way (if new facilities are built) in order that the pre-freeze number of spaces may be maintained.

Another portion of EPA's Transportation Control Plan provides that Boston and Cambridge shall eliminate all on-street parking between the hours of 7-9:30 a.m. for any vehicles not exempt from the prohibition. Residents of the two cities are exempt in their city of registration and their vehicles are identified by means of a sticker. This control is designed to restrict commuter parking on city streets.

Boston already has added a section to its zoning ordinance providing for the establishment of Restricted Parking Districts. In such a district, garages and parking lots are conditional uses, and accessory parking is also subject to review. In order to be approved, a parking facility must meet one of the following conditions: 1) it will serve a traffic demand not adequately provided for by public transportation; or 2) it will replace existing off-street parking spaces in one or more nearby parking facilities; or 3) it is accessory or ancillary to a use which by its nature does not contribute significantly to traffic flows during peak traffic periods; or 4) the facility constitutes a temporary parking lot use of land and that serious intent to reuse the land for an allowed use within a specified period of time has been demonstrated.

The City Council of Seattle, Washington passed in June, 1975 a resolution establishing policies to guide implementation of downtown parking ordinances and regulations in order to encourage increased use of transportation alternatives and reduce automobile use in downtown Seattle. The principle thrust of the ordinance is that any implementation measures should result in approximately the same number of downtown parking spaces that existed as of the date of the ordinance, and that in the CBD there should be a change in the type of parking from long-term to short-term. The ordinance provides that parking policy implementation depends upon the availability of transit alternatives, and upon consideration of economic and environmental consequences.

Also, in Seattle, an International Special Review District has recently been added to the zoning Ordinance. In this district, auto-oriented uses (including storage) are prohibited in certain portions of the district, and are strictly controlled in other portions. The purpose of the special review district is to mitigate the adverse impact that the King County Stadium is expected to have on the International District (which is an Asian residential and commercial district) and to encourage the use of transportation modes other than private automobiles in order to preserve the viability of the area.

In Portland, Oregon, a temporary ordinance was passed in 1974 severely restricting the provision of parking in the Downtown Plan area. This ordinance is to be in effect until a long range parking and circulation plan for the downtown is completed. A maximum lid on parking spaces was adopted, and proposed new parking facilities are subject to review according to conditions which provide that 1) surface parking lots will not be allowed in most cases; 2) accessory parking is limited to a certain number; 3) the applicant must submit a program which will reduce reliance on the automobile by employees and for tenants and will encourage short-term parking; and 4) no facility may have direct access to a street designated as a pedestrian or transit street.

In Chicago, the zoning ordinance establishes a Central Area Parking District, where only accessory parking is allowed; no commercial lots or garages are permitted. In this district, the requirement for accessory parking is reduced to 80% of the normal minimum requirement.

TRANSPORTATION COSTS

This section is still being developed and will be added when complete.

ACKNOWLEDGEMENTS

This was a joint study conducted by the Department of City Planning and the Department of Public Works. The Directors and contributing staff are listed below.

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Acknowledgments

This was a joint study conducted by the Department of City Planning and the Department of Public Works. The Director's and contributors' staff are listed below.

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